

Modification history

Release	Comments
Release 2	This version released with AHC Agriculture, Horticulture, Conservation and Land Management Training Package Version 4.0.
Release 1	This version released with AHC Agriculture, Horticulture, Conservation and Land Management Training Package Version 1.0.

AHCIRG415	Interpret and apply irrigation designs
Application	<p>This unit of competency describes the skills and knowledge required to identify irrigation design key features, define the placement and function of irrigation system, mark out structures and component locations, estimate earth moving requirements, select pumps and system components, and develop staff instructions for interpretation and application of an irrigation design for an installation site.</p> <p>The unit applies to individuals who apply specialised skills and knowledge to the interpretation and application of irrigation designs and have responsibility for the output of others. This includes applying and communicating non-routine technical solutions to predictable and unpredictable problems.</p> <p>No occupational licensing, legislative or certification requirements apply to this unit at the time of publication.</p>
Prerequisite Unit	Nil
Unit Sector	Irrigation (IRG)

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Identify the key features on an irrigation design	1.1 Identify and apply commonly used symbols and abbreviations on plans 1.2 Identify and apply common irrigation terms used on plans 1.3 Identify key features of irrigation plans, elevations and sections 1.4 Identify scale, elevations and sections from drawings
2. Define the placement and function of the irrigation system	2.1 Interpret the plans, drawings and specifications for an irrigation design 2.2 Identify the proposed purpose and capacity of the irrigation system 2.3 Position the designed system in relation to the landscape of the site 2.4 Identify environmental impacts of the irrigation system, and its installation 2.5 Prepare as constructed drawings
3. Mark out structures	3.1 Mark the boundaries of the site 3.2 Identify existing irrigation infrastructure on the site 3.3 Identify electricity and communications infrastructure on the site plan and develop safety procedures 3.4 Mark out on site electricity and communications infrastructure 3.5 Mark out on site remnant vegetation to be retained 3.6 Identify and peg out on site proposed pipelines 3.7 Identify and peg out on site proposed irrigation structures
4. Estimate earth moving requirements for construction	4.1 Interpret earthworks drawings and take site levels 4.2 Estimate the amount of earth to be relocated or removed from the site 4.3 Confirm the sequence of earthworks and communicate to relevant staff 4.4 List and quantify materials required for irrigation structures 4.5 Verify construction requirements with designer
5. Select pumps and system components	5.1 Interpret design specifications for water volume, pressure and delivery pattern required 5.2 Select pumping system 5.3 Select irrigation system components 5.4 Verify component selection with designer

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
6. Mark out locations of all components	6.1 Define the sequence of operations for installation 6.2 Identify the delivery and storage area for components 6.3 Identify the placement of all components
7. Develop instructions for staff	7.1 Identify potential environmental hazards and strategies to minimise risks in instructions 7.2 Document the sequence of activities and work duties 7.3 Discuss workplace health and safety hazards and risks and safe working practices to manage risks with staff 7.4 Provide a construction schedule to staff

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.

Skill	Description
Reading	<ul style="list-style-type: none"> Identify and interpret information regarding design requirements for irrigation system Identify and apply commonly used abbreviations and terms on plans Interpret irrigation design specifications
Writing	<ul style="list-style-type: none"> Document as constructed drawing Identify and document electricity and communications infrastructure on site plans Document safety procedures Document irrigation structures material requirements Document installation sequence of operations, activities, work duties and construction schedule
Oral communication	<ul style="list-style-type: none"> Initiate discussions with staff, using clear language to communicate production schedule, design requirements and safety procedures Use clear communications with designer to verify construction requirements and component selection
Numeracy	<ul style="list-style-type: none"> Identify and apply commonly used symbols on irrigation plans Identify scale, elevations and sections on irrigation drawings Estimate amount of earth to be relocated or removed from the site Interpret design specifications for water volume, pressure and delivery pattern requirements
Navigate the world of work	<ul style="list-style-type: none"> Identify and describe own workplace requirements, including safety requirements, associated with own role and area of responsibility

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AHCIRG415 Interpret and apply irrigation designs Release 2	AHCIRG415 Interpret and apply irrigation designs Release 1	Minor changes to performance criteria and foundation skills	Equivalent unit

Links
Companion Volumes, including Implementation Guides, are available at VETNet: https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72

TITLE	Assessment requirements for AHCIRG415 Interpret and apply irrigation designs
Performance Evidence	
<p>An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.</p> <p>There must be evidence that the individual has interpreted and applied irrigation designs on at least one occasion and has:</p> <ul style="list-style-type: none"> • read contour maps and interpret elevations and distances • marked out procedures • interpreted technical drawings and site plans • documented and communicated as constructed drawings, safety procedures and material requirements • documented and communicated installation sequence of operations, activities, work duties and construction schedule • interpreted pressures, flows, velocities and friction losses • determined efficiency of the system with varying system components. 	
Knowledge Evidence	
<p>An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:</p> <ul style="list-style-type: none"> • principles and practices of irrigation design interpretation • erosion control and design principles • how to interpret plans, and general and technical specifications • hydraulic calculations • levels and levelling • principles of native topsoil conservation and protection • pumps and pumping system components • relevant work health and safety and environmental requirements • selection of water pumping and distribution components delivery based on specifications and requirements. 	
Assessment Conditions	
<p>Assessment of skills must take place under the following conditions:</p> <ul style="list-style-type: none"> • physical conditions: <ul style="list-style-type: none"> • a workplace setting or an environment that accurately represents workplace conditions • resources, equipment and materials: <ul style="list-style-type: none"> • irrigation system site • site measuring, mark out and pegging tools and equipment • specifications <ul style="list-style-type: none"> • irrigation design, drawings, plans and specifications • relationships: <ul style="list-style-type: none"> • designer, staff • timeframes: <ul style="list-style-type: none"> • according to the job requirements. <p>Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.</p>	
Links	<p>Companion Volumes, including Implementation Guides, are available at VETNet: https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72</p>